

# MARINE REVIEW.

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## Anchor Line Steamship City of Rome.

The engraving on this page of the Anchor Line steamship City of Rome is used, not with a view to going into an extended description of the vessel, but for the reason that she is a most handsome specimen of naval architecture, and is admitted to be among the most magnificent steamers in the Atlantic trade. The City of Rome was built at Barrow-in-Furness, England, by the Barrow Ship Building Company. She is 560 feet long, 52.3 feet beam and 37 feet depth of hold. Her register tonnage, gross, is 8,415. Her engines are worked to 8,000 horse power, but are capable of developing much greater power. The state room capacity is sufficient for 480 first class passengers.

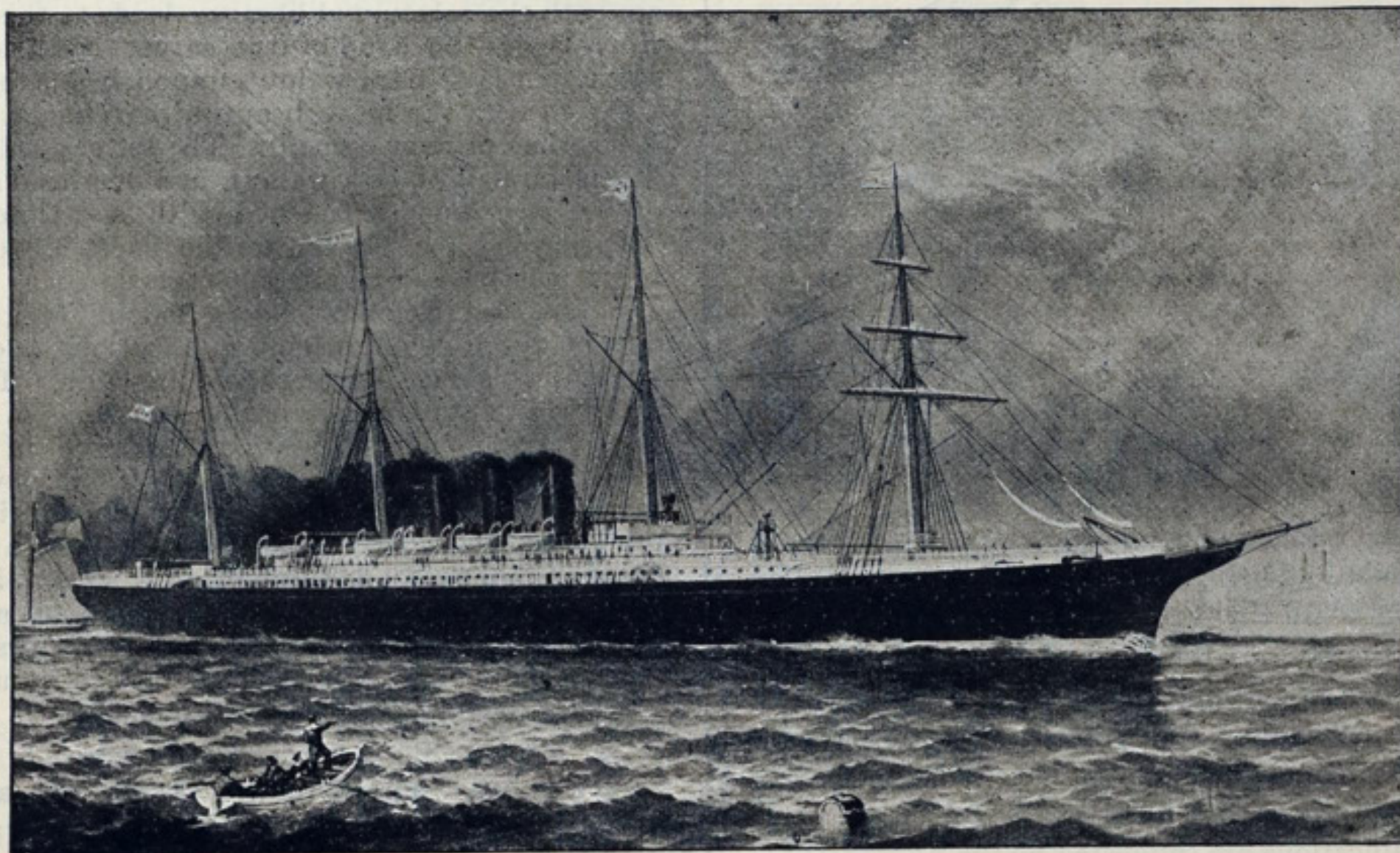
## Under the Water-craft Law of Ohio.

When attorneys representing the Globe Iron Works Company of Cleveland caused the sheriff of Wayne county, Mich., to tie up the steel steamer J. B. Ketcham, while she was passing

later. Contracts for building ships and vessels or for labor done or materials furnished in their construction are not maritime contracts, although contracts for repairs and supplies come under that head and are within the jurisdiction of the federal courts. Accordingly the Globe company having furnished the boilers for the Ketcham when she was under construction have a lien on the vessel that may be enforced in the state of Ohio, and under the Michigan law, which recognizes liens from sister states, it is expected to collect this claim.

## Last of the Private Lights.

Within a few days the last of the private lights maintained by lake vessel owners for several seasons past will be replaced by aids to navigation furnished by the government. The new light-ship at Bar point, mouth of the Detroit river, and the new float lights for the Lime-Kiln crossing are already in position, and the three light-ships constructed from the appropriation of



ANCHOR LINE STEAMSHIP CITY OF ROME.

up the Detroit river a few days ago, they probably knew what they were doing, notwithstanding criticism that has since appeared in some of the newspapers. The suit in attachment was not instituted under Michigan law. It was begun under the water craft law of Ohio, and as the Ketcham had avoided coming into any of the Ohio ports, the proceeding was in accordance with the best course open to the plaintiffs in the case. The cause of action was not maritime and did not come under the jurisdiction of the federal courts.

The Ketcham was built by the Craig Ship Building Company of Toledo for Bills & Koch, lumber dealers, the Globe Iron Works Company furnishing the boilers. Bills & Koch gave the Toledo builders a mortgage on the boat for a large portion of her cost, and when they failed later the mortgage was foreclosed and the boat sold to H. M. Loud & Son, lumber dealers of Oscoda. The plaintiffs in the present case claim that when the boat was sold to Loud & Sons, the latter were notified, through their Buffalo attorneys, of the unpaid balance on the boilers, and that there was an understanding that this balance would be settled

\$60,000, originally intended for a light-house at Eleven-Foot shoal, entrance to Green bay, were last week accepted by the light-house board from the Toledo builders. Of these three latter ships, one will be placed on Corona shoal, near the entrance to Green bay, another on Poe's reef, Lake Huron, near the Straits of Mackinaw, and the third at the foot of Lake Huron, a little south and west of Northwest shoal. All three of the ships just built will be hurried to their stations. The boat to mark Northwest shoal at the foot of Lake Huron will do away with the necessity of the range lights at Point Edwards, and thus the vessel owners will be relieved of the last of the private lights.

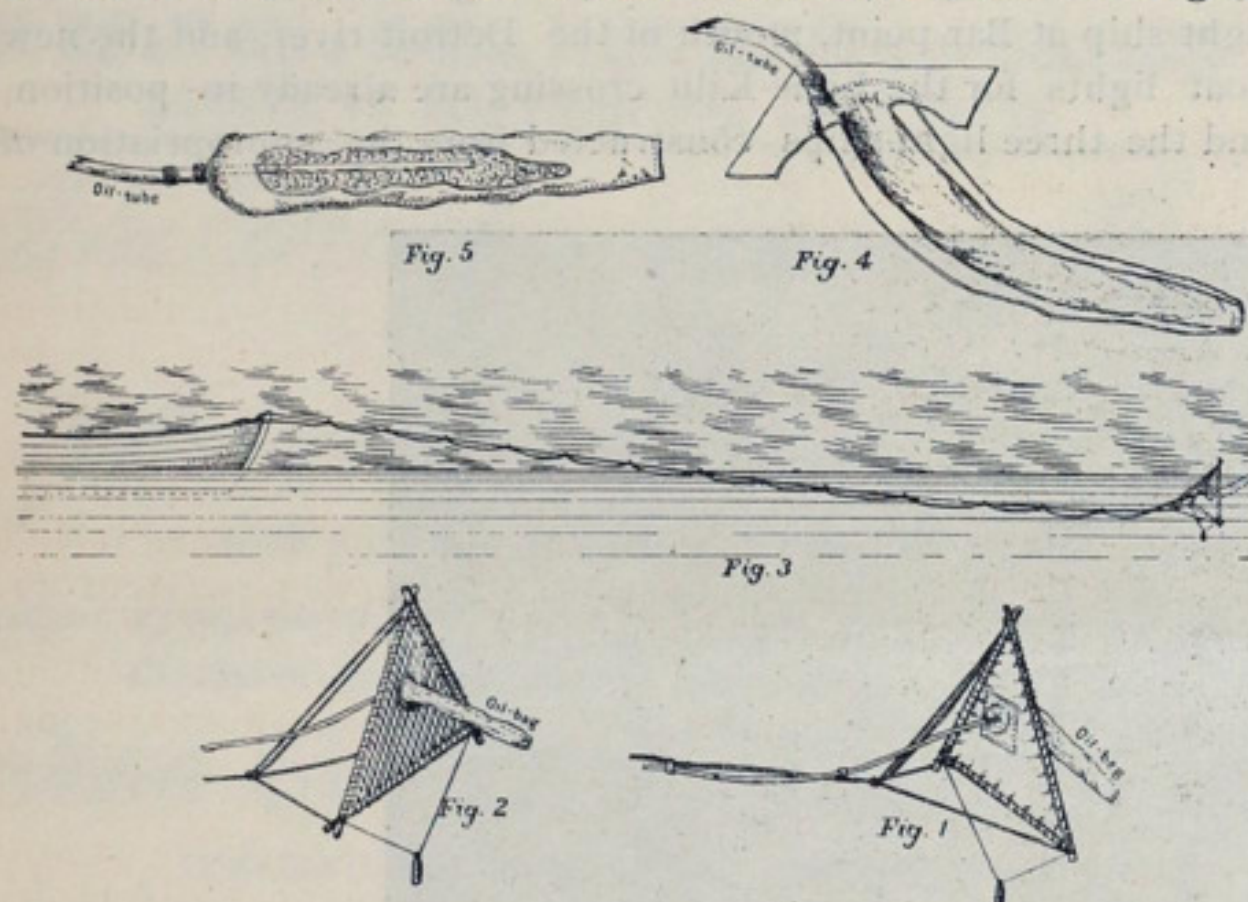
In constructing only three instead of four vessels from the appropriation of \$60,000, and in allowing but one light-ship to mark the dangerous shoals at the entrance to Green bay, the light-house board has not complied with the wishes of the committee of the Lake Carriers' Association in charge of such matters, but there is consolation to all vessel owners in knowing that the expense of private lights has finally been removed.

British charts of Lake Superior cover the entire north shore. \$1.



### An Oil Distributing Anchor.

From the Chicago office of the hydrographic service, we have received a description of an oil distributing sea anchor, which is simple and cheap and might prove to be of especial usefulness to fishing vessels at anchor in a seaway. It is the invention of Thomas W. Wilson, a seaman of the United States navy, serving on board the training ship Portsmouth. The device consists of a triangular frame of wood cross-lashed at the angles and provided with a span of three legs, as shown in the engraving. Across the interior triangular space of the frame is stretched a piece of canvas, fitted with eyelet holes, and laced through these eyelet holes to the frame, as shown in Fig. 1. To back and support the canvas, a piece of netting is laced to the frame, as shown in Fig. 2. In the middle of the canvass is stitched a patch, to which is stitched a bag (or double bag), consisting of two thicknesses of canvas, as shown in Fig. 4. The space between these bags is the oil chamber. At the trailing end of the outer bag a simple valve may be placed, or the outer bag may be perforated with sail needles. A tow line from the vessel is bent to the span, as shown in Fig. 3. A simple rubber hose or tube connects with the oil chamber, as shown in Fig. 4.



This hose leads to the vessel, being seized to the tow line at intervals, so as to insure its being kept slack while the low line is under tension. On board the vessel a pump or bulb syringe is employed to feed the oil into the oil chamber of the distributor, as may be desired. For fishing vessels the device may be kept attached to the anchor by a rope sufficient length to insure that the device shall be awash when in use. The device can then be streamed when the anchor is let go.

Two minor modifications are suggested by the hydrographic office. First—A weight and span, as shown in Figs. 1 and 2, to keep the device from rotating when not attached to the anchor, and floating free. Second—In lieu of the arrangement shown in Fig. 4, a trailing bag of only one thickness of punctured canvas to be used, the interior of this bag to be filled with picked oakum, as shown in Fig. 5, the hose to connect with the interior of the bag. Obviously the general device may be made of any size desired and offers a wide field of usefulness.

### Vanderbilt's Floating Palace.

Mr. W. K. Vanderbilt's steam yacht, Valiant, built by Laird Bros., Birkenhead, England, at a cost of three quarters to a million dollars, arrived in this country several days ago, but descriptions of her on this side have been very meager. The particulars of the engines, which develop about 4,500 horse power, have been closely guarded. The hull is 312 feet long and of 2,400 tons register. The Valiant is the largest steam yacht in the world and there was more care and attention paid to details of her construction than was given to even the great Atlantic liner Campania. Her normal speed is 16 knots and forced she can make 18 knots. Her complement consists of forty men, equally divided between deck and engine room. She carries two masts, square rigged, and can make good headway without

her engines. The ventilators, hinges, catches and rails are constructed of white metal. All the sanitary piping is of finest copper. The yacht is a veritable exposition of all of the latest patents, having signal light indicators and scores of similar electrical devices.

St. Clare Byrne, London, designed the hull and Mr. Vanderbilt supervised personally the contract work, so that if the boat does not meet expectations, the builders can give the same excuse that the Herreshoffs gave to Mr. Carroll concerning his Navahoe. The deck-houses are of steel paneled with teak, which is freely used in her above deck construction.

Leading art decorators of France and Great Britain were assigned different portions of the work in the state rooms, of which there are about twenty, exclusive of the smoke-rooms, dining saloon, and library. The two latter are the largest apartments in the ship. The saloon is 18 feet in length and 33 feet in width, running practically the whole breadth of the ship. The general design is Louis Quatorze, and the wood is fine grained French pine, resembling English poplar, but of course the original grain and color of the wood is hidden beneath the fine white enamel with its golden embellishments. The carving, which is out of solid wood, is simply exquisite, every foot of the wall panelling being rich in high relief carving, beautifully and artistically done. At one side of the hall is a Steinway piano, and the chair settees are of brass inlaid Chippendale. The furniture is upholstered in rich crimson silk velvet. The dome of the saloon rises to the upper deck, and a soft, sensuous light creeps through its stained panes to the saloon below. Leaving the saloon, a passage of about 100 feet in length, arched and beautifully decorated and carpeted, with a texture costing three guineas a yard—as are both the saloon and library—leads to this latter apartment, where again the hand of the carver has had free play. This apartment is of dark walnut, unpolished; the panels and pilasters rich with the most beautiful carving, which indeed embellishes the entire apartment. The settees, sideboard, and general fittings are all of dark walnut, and overhead are beautiful panels of the same wood, chastened with soft-tinted paintings. The fireplace and mantelpiece are the finest bits of work in the ship, being massive and exquisitely carved.

This description of dining saloon and library, taken from one of the London marine publications, is characteristic of the lavish furnishings throughout the ship. The features of Mr. Vanderbilt's state room are the panelings of silk and an ingle-nook fitment having seats upholstered in French silk. The secretary's apartment is designed with a view to his work, containing an elaborate cabinet. The bath in this room as in others, except where separate bathrooms are provided, is encased in mahogany and upholstered so that it can be used for a settee. The captain's room is finished in mahogany and contains a ward-robe with silver bevelled mirrors. The social hall is in Francis I style, being furnished in fumed oak elaborately carved. The coverings are red damask.

### Profit in the Quick Passage.

The coal consumption of the Campania is, no doubt, great; it has to feed 30,000 horses at full gallop for 2,800 knots, and the gallop will last about five days and a quarter. Although this means over 2,500 tons of coal for a trip, the shorter trip means less human fuel in the shape of fewer meals for the passengers. The quick passage is all in favor of the ship owners in the commissariat of the ship. Many of the passengers become hungry only on the fourth day, and the reduction of the journey from ten to five days means something considerable in the consumption of beef, seeing that the reduction is always in the hungry days. The ship-owner calculates, with appalling indifference to suffering humanity, that if the passage could be shortened a day or two more, some of his passengers could be landed just at the time they were beginning to think about the cook as a person of consequence. There is another practical view of the case. A ship that can make a voyage to New York and back in a fortnight will earn fifty-two freights in a year, instead of the twenty-six of the boats of twenty years ago. The crew costs no more, if the coal does, and the earnings are double.—Saturday Review (English).

Shipments of lumber from the head of Lake Superior are certain to exceed all previous records, notwithstanding the depression in freights. A conservative estimate of Chequamegon bay shipments from the opening of navigation to Sept. 15 credits Ashland with 92,850,000 feet, Washburn with 47,000,000 and Bayfield with 5,000,000 or a total of 144,850,000.



### Domestic Commerce of Great Britain and the United States.

Mr. Thomas J. Vivian read at the Water Commerce Congress, held in Chicago recently, a very interesting paper dealing with the status and extent of American domestic water commerce. Some comparative statistics of American and British water commerce, which the paper contains, are especially interesting. Dealing only with those vessels engaged in traffic, it appears that while in the census year Great Britain had 5,968 vessels engaged exclusively in the foreign trade, with a tonnage of 6,595,445 tons, the United States only listed 686, with a tonnage of 636,691 tons. Of vessels engaged in mixed foreign and domestic trade Great Britain had 760, with a tonnage of 185,026 tons, while the United States had 601, with a tonnage of 237,694 tons. Of vessels engaged exclusively in domestic trade Great Britain's account was 10,826, with a tonnage of 860,683 tons, while the United States had 12,731, with a tonnage of 2,701,674 tons. These figures deal only with the steamers and sailing vessels of both nations. With the addition of the unriggered craft the contingent engaged in the home trade in the United States rises to 23,292 craft, with a tonnage of 6,710,531 tons, while the totals of the two fleets stand as follows: Great Britain, 17,554 craft; the United States, 24,579. Great Britain's tonnage, 7,641,154; the United States' tonnage 7,584,916, or less than 60,000 tons behind Great Britain in the tonnage account, and 7,025 craft ahead. A reduction of these figures to averages shows, Mr. Vivian says, that though Great Britain's foreign fleet averaged 1,105 tons per vessel, while the average of foreign traders of the United States was only 928 tons, the average tonnage of Great Britain's domestic fleet was only 80 tons per craft, while that of the domestic fleet of the United States was 212 tons without the unriggered, and 286 tons per vessel including the unriggered, a comparison which is by no means discouraging.

### Around the Lakes.

Hard coal shipments from Buffalo last week increased 78,325 tons.

A feature of the new Northern Steamship Company's twin-screw passenger steamers, building at Cleveland, will be open fire places with elegant surroundings.

The steamer Lotus of Marquette, 219.03 tons gross and 188.40 net, and the schooner Pinta of Chicago, 7.70 tons gross and 7.31 net, were assigned official numbers last week by the bureau of navigation. The Lotus is numbered 141,298 and the Pinta 150,639.

Lieutenant Geo. P. Blow, U. S. N., will continue in charge of the branch hydrographic office at Chicago until after the exposition, when he will probably return to Washington and resume his former duties in the hydrographic office of the navy department.

John Stang of Lorain was the lowest bidder for the removal of the wreck of the schooner Pelican, sunk near the entrance to Ashtabula harbor, Lake Erie. He offers to remove the obstruction for \$1,200 and will probably be ordered by the United States engineer at Cleveland, Col. Jared A. Smith, to begin the work immediately, as no objection has been heard from owners or underwriters interested in the Pelican.

Record breaking grain cargoes are again the rule. The Wilson line steamer Yuma of Cleveland has just delivered at Buffalo from Lake Superior 114,658 bushels of wheat (3,440 tons net.) This is the largest wheat cargo ever carried on the limited St. Mary's river draft. Capt. John Shaw manager of the steamer Selwyn Eddy of the Eddy-Shaw fleet says he will put 160,000 bushels of corn into that boat on her next trip to Chicago, and it is probable that the big straight-back will carry such a load.

The new government vessel which has taken the place of the private light-ship that has been maintained by Capt. Andrew Hackett for several seasons at Bar point, mouth of the Detroit river, will be known in the light-house service as light-ship No. 59 and will show simultaneously from three lens lanterns encircling the foremast head a fixed white light. The focal plane of the light will be 40 feet above lake level, and the light may be seen in clear weather, the observer's eye 15 feet above the same

level, 13½ miles. During thick weather a 6-inch steam whistle will sound blasts of 10 seconds' duration, separated by silent intervals of 30 seconds. If whistle be disabled, a bell will be rung by hand.

Another test will this week be put upon the new dry dock of the Cleveland Dry Dock Company, and it is expected that the dock, in the construction of which so many disadvantages have been met with, will be found to be all right. If the test proves satisfactory, the cofferdam at the entrance to the dock will be removed at once, and Cleveland will then have three of the largest docks on the lakes. The two big docks of the Ship Owners' company are capable of caring for the largest vessels on the lakes, and have been engaged almost constantly since they were built.

### Iron Mining Matters.

One stockholder in a Lake Superior mining company takes a calm view of his chances in these days of big consolidations that are certain to crowd out the smaller mines. Col. S. W. Tanner, a director in the North Pabst company, writing from Chicago to C. J. Coe, secretary and treasurer of the company at Ironwood, Mich., says: "The mines and mining building is where I really felt the most at home. I don't find anything so far like our North Pabst ore. I am more than ever convinced that we have a big property. The Rhinelander, which is owned by a consolidation of St. Croix valley and Belvidere capital, has more black oxide granite of a refractory hardness than our property. Though we have found no ore in place or on the property, yet our chances for a volcanic upheaval of metal is good. Then again we stand just as good a show as the Norrie, Colby or other mines for meteors rich in iron, to drop in upon us from outer space, and with these two avenues open to us our prospects will evidently be all right." It is almost needless to add that the North Pabst has long been simply a prospect on the Gogebic range that has not at any time appeared among the list of shippers.

Shipments of iron ore from Two Harbors up to and including Wednesday, Sept. 13th, aggregated 701,671 gross tons and were divided as follows: Chandler, 344,421 tons; Minnesota, 291,414; Zenith, 7,643; Cincinnati, 9,939; Canton, 23,940; Franklin, 22,168; Hale, 2,176. Shipments of Gogebic range mines through Ashland up to and including Saturday, Sept. 9, foot up 892,388 tons, divided among the different mines as follows: Ashland, 26,465 tons; Aurora, 125,870; Colby No. 2, 35,470; Tilden, 96,262; Germania, 4,975; Iron Belt, 17,625; Montreal, south vein, 1,347; Montreal, north vein, 27,235; Eureka, A, 1,949; Brotherton, 14,643; Comet, 5,035; Eureka, 24,166; Careys, 44,214; Newport, 81,336; Norrie, 195,232; East Norrie, 68,066; Pabst, 87,665; Jack Pot, 1,651; Davis, 11,353; Sunday Lake, 17,525.

Although there is, of course, no market among investors of the general class for stocks of the numerous Missabe range mining companies, stock brokers of Duluth continue sending out circulars containing prices. Figures quoted on some of the leading stocks although nominal, may prove interesting. They are: Biwabik Mountain Iron Company \$20, Great Northern \$3.50, Lake Superior \$3, Mountain Iron \$55, Missabe Mountain \$15, Adams \$9, Buckeye \$2.50, Great Western Mining Company \$1.75, McKinley \$24.50, Messabe Chief \$2.10, Ohio \$6, Pioneer \$1, Tonawanda \$2, Vermillion and Missabe Iron Land \$1, Zenith \$1.25.

### Stocks of Grain at Lake Ports.

The following table, prepared from reports of the Chicago board of trade, shows the stocks of wheat and corn in store at the principal points of accumulation on the lakes on Sept. 16, 1893:

	Wheat, bu.	Corn, bu.
Chicago.....	18,579,000	2,303,000
Duluth.....	2,937,000	.....
Milwaukee.....	947,000	.....
Detroit.....	1,074,000	5,000
Toledo.....	1,559,000	85,000
Buffalo.....	1,545,000	401,000
Total.....	26,641,000	2,794,000

At the points named there is a net increase for the week of 1,035,000 bushels of wheat and 120,000 bushels of corn.



### Chicago's Poor Harbor.

WESTERN OFFICE, MARINE REVIEW,  
No. 701 Phoenix Building, CHICAGO, ILL., Sept. 21.

The big steamers and Chicago river have come to that point at last where they do not agree, and we are likely to see serious times in future, unless something is done on one side or the other. What a predicament for a captain! Stuck in a bridge, half way to his elevator; the other branch of the river still worse, and not enough of his kind of grain in the only elevator accessible to fill the hold. South Chicago seems to be the future harbor for this grain market. Of course the present elevators will do business until they fall into decay, and as they are well kept up, this is too far ahead to talk about. Smaller boats, and those running near 300 feet, can do very well in the old river, but the broader Calumet is the place for the big fellows like the Centurion. If we should get her in port with the Curry and Merida, not to mention some of the others, it would take a steam shovel and all the tugs in port to straighten out the mess that would be occasioned. Then the one nearest the mouth would have to go out first, and the others in turn. When the Centurion came into port, she gave Chicago marine men a chance to see one of the big boats, which came out this year. She caused favorable comment all along the line, and many old timers spoke in very flattering terms of her. It is said that she gives promise of good speed, and in time will give the Owego and Merida a good argument. Members of her crew say she can do them up. Capt. Brown is not at all loud in his opinion, but merely says she is a good running boat.

### Canada Trying to Hold Onto the Grain Trade.

Special Correspondence to the MARINE REVIEW.

KINGSTON, ONT., Sept. 21.—The papers of Montreal, Kingston and other places, are now busily engaged discussing the necessity of holding the extensive grain transshipping trade for the St. Lawrence route. This year there will be over 20,000,000 bushels handled; not exclusively Canadian grown grain but shipped mainly from Chicago, Duluth and other American ports. The questions that are asked in looking over the work of the past, are: "Where, how and why did the blockades and detentions occur and what can be done to prevent a recurrence of them and to encourage and increase the shipments?" The detentions have all occurred either at Kingston, in the St. Lawrence canals or at Montreal. There has been no delay west of this city. Kingston shippers and vessel owners declare positively that the trouble and delay is in Montreal. Owners of the grain are also interested in the forwarding companies. The contracts they make with vessel men call for no demurrage, but each vessel arriving at Kingston is discharged in turn. Consequently the grain sent to Montreal for ocean-going vessels is held in the barges until the tonnage is available, and often for a week or more grain is kept in the barges, instead of being stored to await the arrival of the ocean craft. Capt. William Leslie, James Swift, George Richardson, James Duncan Thompson, and others well known in shipping circles, all say that if the barges are promptly discharged at Montreal there is barge capacity enough to handle twice the quantity of grain now coming to Kingston. The owners of the grain to save storage fees, hold the barges to await their own convenience. With quick, active work in transshipping at Kingston and Montreal, it is conceded that the rates on grain between these ports could be reduced by one cent. The forwarders' charges are now 2½ cents to 2¾ cents per bushel. The discussion of the question will do much good and may be helpful in bringing about expeditious handling both here and in Montreal.

### Another Letter from Mr. Wisner.

EDITOR MARINE REVIEW:—In your issue of Sept. 7, Gen. Poe gives a very clear statement of the present condition of the improvements of Lake Erie harbors, and of the beneficial results that would be obtained by changing the present methods, provided such changes would produce the conditions claimed without seriously damaging private property along the lake border. There is no doubt but that Gen. Poe's report on this matter settled it so far as his department is concerned, but, fortunately, the problem is sufficiently simple that the intelligent investigator can easily solve it without resorting to expert engineering opinions.

The amount that the level of Lake Erie may be safely raised without damage to present structures, can only be determined by a careful inspection, but as long as the high water levels under the present conditions are not exceeded, certainly no great harm can be done. Gen. Poe does not dispute the fact that with a properly constructed dam at the foot of Lake Erie, the annual fluctuations of the water surface may be reduced to less than 1 foot, which, if true, shows that the low water level may be raised at least 3 feet without causing the high water to exceed that which would occur under the present conditions. The effect of such a dam on the level of Lake Ontario and the St. Lawrence channels would be so small that it would be entirely lost sight of in the annual fluctuations of the water levels.

The area of Lake Erie is 9,960 square miles, and the discharge through Niagara river about 240,000 cubic feet per second at mean stage, an amount sufficient to raise the lake level 1 foot in thirteen days, and, as it would take at least two years to construct the proposed dam, the effect on the discharge of Niagara river would be less than 5,000 cubic feet per second for two years, or only one-half the amount that will be taken from Lake Michigan by the Chicago

sanitary canal when completed. The damaging effects which Gen. Poe predicts such a dam would have on the St. Lawrence waterways are on a par with the formula recently determined for the discharge of Niagara river, which indicates that an excessive rise in Lake Erie would cause the river to flow up stream. It is somewhat surprising that Gen. Poe is not aware of the fact that the Canadian government has already granted authority to construct such dams in Canadian waters, and, instead of objecting to such structures, would be glad to have them built.

The recent change of reference plane to which the depth of channel is to be referred—on which Gen. Poe seems to place so much stress—will only make the channel 6 inches deeper than it would have been if referred to mean lake level,—a reference plane that vessel men would readily understand, and which for years has been the accepted plan for reference on all the lake charts. No attempt was made to obtain this information from Gen. Poe's office for the reason that the writer on two previous occasions was obliged to have a resolution passed by Congress asking for the information before it would be furnished by the engineer corps.

The deterioration of the channels at the entrances of Lake Erie harbors is due to the movement of sand parallel to the shore, caused by the combined action of waves and the shore currents. In depths of over 20 feet wave effect is not often sufficient to disturb sand at rest on the lake bottom, but in less depth such disturbance does occur, and where channels are cut through the bars in front of harbors, deposits are made in the deeper water of the channel and remain there until dredged out. This fact is well illustrated by the deposits annually made in the improved channel across Maumee bay. The natural depth across the bay is from 9 feet to 12 feet, through which the improved channel is dredged to a depth of 17 feet. The average annual fill in this channel is about 6 inches, while the depth outside of the channel remains practically unchanged. With these facts before us it does not require expert evidence to show that if the low water level of the lake be raised 3 feet, the increased depth thus obtained would be practically permanent. At least the civil engineers of the country are ready to undertake to accomplish such results under contract to produce permanent depths or no pay.

Gen. Poe must be very badly misinformed if he thinks that the fluctuations of the water surface at the head of Lake Erie seldom exceed 1½ feet. During the gale of last October the water surface at Monroe piers fell over 7 feet in three hours and remained low for a considerable time. A change of 3 feet in the water level at the mouth of the Detroit river is of frequent occurrence during the spring and fall months when strong westerly winds are common. Previous to the improvement of the Lime-Kiln crossing, this change of level was so important to vessel interests that a gauge was kept by the pilots at Amherstburg and a signal displayed day and night indicating the draft with which a vessel could safely pass out. When the channels through the upper lakes are deepened to the same as that at the mouth of the Detroit river, the necessity of reducing these fluctuations of the water surface of Lake Erie to a minimum will have to be considered, or else vast sums of money will be needed annually to maintain the constantly deteriorating channels and harbors of the lake.

Detroit, Sept. 13, 1893.

GEO. Y. WISNER.

### Valuable Collection of Charts.

A valuable publication is being distributed by the weather bureau. It is a collection of charts embodying the results of international observations that were made according to an arrangement entered into at the Meteorological Congress held at Vienna in 1873. The observations were made largely at the expense of the United States government and covered the period from 1875 to 1887, inclusive. During the whole of that period 150,000 monthly reports, representing 5,000,000 daily observations, were regularly received at Washington and prepared for publication. The work was done under the direction of Maj. Dunwoody, the assistant chief of the bureau, and the charts show meteorological conditions and storm movements in both hemispheres.

### Record of Speed and Big Cargoes.

[Masters or owners of freight boats are invited to report improvements on this list.]

Iron ore: Maritana, Minnesota Steamship Company of Cleveland, 4,260 gross or 4,771 net tons, Escanaba to South Chicago; S. S. Curry, Hawgood & Avery Transit Company of Cleveland, 3,852 gross or 4,314 net tons, Escanaba to Fairport.

Grain: Selwyn Eddy, Eddy Transportation Company of Bay City, 139,820 bushels of wheat, Detroit to Buffalo; same steamer, 141,500 bushels of corn, Chicago to Buffalo; Onoko, Munch estate, Cleveland, 187,657 bushels of oats, Chicago to Buffalo.

Coal: E. C. Pope, Eddy Bros. of Bay City, 3,950 net tons anthracite, Buffalo to Chicago.

Speed: Owego, Union Line of Buffalo, Buffalo to Chicago, 889 miles, 54 hours and 16 minutes, 16.4 miles an hour.

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### An Honest Ship Builder.

Mr. W. H. Radcliffe, who died very suddenly in Cleveland on Monday last, was for a long time connected with the wooden ship building industry. He built a number of vessels in Cleveland, notably some large ones, in their time, for Alva Bradley and the estate of that well known ship owner, whose name is so closely allied with the building up of lake commerce. It was a matter of comment that these ships, as well as others constructed under Mr. Radcliffe's direction, were put together with great care and without a great margin of profit. He was always credited



MR. W. H. RADCLIFFE.

with building an "honest ship," a term highly complimentary to the builder of wooden vessels, in the days when specifications were not carefully drawn by naval architects, and when much depended upon the integrity of the builder. Mr. Radcliffe was born at Kirk Andrews, Isle of Man, in 1826 and resided in Cleveland for about forty years. He built the first of the dry docks owned by the Cleveland Dry Dock Company but retired from the management of that company two years ago. During all of his time of active service he was held in high esteem by everybody in the lake business.

### A Pirate of the Lakes and the Pacific.

The Sydney Bulletin (Australia) of a recent date prints another chapter dealing with the daring exploits of Capt. William Henry Hayes of Cleveland, commonly called "Bully" Hayes, who had made quite a famous reputation on the lakes before going to the Pacific in the early sixties.

"One hardly ever hears the name of the redoubtable 'Bully' mentioned nowadays," says the Australian writer, who is recounting the tales heard on the lakes years ago, "and yet it is not long since his name was a power all over the wide Pacific. I am not going to spin a fancifully embroidered tale about things that did not happen, and wrong the memory of the defunct pirate (whose bones lie at the bottom of the Northwest Pacific, unless indeed, as is most likely, they were long ago digested by the blue sharks,) by even alluding to the murders, most foul and unnatural, credited to him by his enemies. Many of these tales are purely missionaries' babble and slander—the *nidus* formed in Micronesia and spread by villainous newspaper reports. I will relate what I did see and what did occur. A man's true character is always revealed by sudden misfortune. I was with Hayes when, perhaps, the heaviest stroke of ill-luck he ever experienced befell him. In March of '74, the lily-white brig Leonora ground herself to death on the jagged coral of Strong's island, in the Caroline group, and 'Bully' seemed for the nonce a broken man. But I did not so well know then that beneath that gay, laughing, devil-may-care exterior there lay a whole world of dauntless courage and iron resolution; that six months after the brig was destroyed, he would, by unwearying toil and the wonderful

fascination he exercised over his fierce and ruffianly crew, find himself a wealthier man than when he trod his brig's deck with a full cargo of oil beneath his feet and \$10,000 in his cabin.

"Let me first of all, though, speak of the Leonora, once the Waterlily. At this time Hayes made his appearance at one of the treaty ports in a ship named Old Diminution. On the way out from New York his crew had mutinied, headed by the steward, a Greek. In the fight that ensued, Hayes killed one man outright by a blow of his fist, and threw another with such violence that he died in a few hours. An inquiry was held, and Hayes came out of it well. The Old Diminution was sold, and Hayes entered the Imperial Chinese service as commander of a gunboat. Another gunboat was commanded by one Ben Peese. The two became friends. Peese was removed from the Chinese service and soon afterward got possession of the Waterlily and was joined at Macao by Hayes. With a new ship and a new crew (many of whom were Hayes' and Peese's former Chinese naval pirates), the partners sailed for the Bonin islands, where Peese was well known and had lived before. Two days before making the Bonins, a ship was sighted ashore on a reef. It was a gunboat from Macao. Peese agreed for \$1,000 to stand by them and save all he could, including her four guns. The guns were rafted to the Waterlily, then the small arms and stores followed in the boats belonging to the gunboat. Arrangements were made for repairs to the stranded ship and the return of guns, stores, etc., but the next morning the brig was nowhere to be seen. She was headed on a southerly course to the Pelew group, where the captains sold the guns to the chiefs, and got rid of nearly all of their crew, taking Pelew men and Japanese in their places. Here Hayes and Peese fell out—over a woman of course. Peese bought a very beautiful girl from one of the chiefs for \$250, which, he told Hayes privately, he did not intend to pay. Hayes, for reasons of his own, insisted on his either paying the sum agreed or on giving her up. Peese, declaring he would do as he liked, drew his pistol and ordered the girl into the boat. Hayes tore the weapon from him, and seizing the girl with one hand pointed the pistol at Peese with the other. He then asked the girl to tell him if she was afraid of Peese. She said no, and then 'Bully' quietly told her to follow his fellow captain aboard. Peese never forgave him. There was mutual distrust afterwards.

"After another cruise and return to Apia Harbor, Samoa, Hayes alone was in command. The voluble, bearded Peese had, he said, sold him his interest in the ship and gone to China again. People talked and said that Hayes had killed him, but as the strength of the big captain's right arm was well known in Samoa, nobody talked too loud.

"Just about this time the United States steamer Narragansett steamed into Apia. It had been rumored around Polynesia for some time previously that certain charges had been made against 'Bully' by American citizens. What the exact nature of these charges were has never been known. Anyhow, the captain of the corvette heard that Hayes was at anchor in Apia, and came down full speed from Pago Pago in Tutuila. Hayes' vessel was taken in charge and he was placed under arrest. But the naval officers did not meet the truculent, piratical ruffian they had expected to see. Instead, they met a quiet man of herculean proportions, whose manner secured favor from them. Hayes listened with an unmoved face to the warrant for his arrest. He was allowed to write a letter to his wife, and given the liberty of the ship whilst the captain of the Narragansett was preparing for the trial. A notification was sent to the three consuls of his seizure, and asking them to verify the charges made to them by various persons against Hayes. None but the German consul responded, and his witnesses (traders whose stations had been cleaned out by Hayes) utterly broke down. One look at those steady, steel-blue eyes was enough for them. They knew what was in store for them if any of them crossed 'Bully's' path again, and slunk away to their German protectors. After two hours investigation, the captain broke up the court, and formally told those present that he would announce his decision in writing. As the German consul, followed by two German merchant skippers, rose from the table, Hayes asked the captain if he could say a few words. Leave was granted.

"I merely wish to tell these gentlemen leaving that I hate liars—especially Dutch liars."

"You forget your position, sir," said the captain, turning away to hide a smile.

"Two hours afterward the Narragansett's captain wrote a brief note to the consuls, stating that he would not—from the unreliable and contradictory evidence—be justified in taking Hayes to the United States, and added some severe remarks about the skulking and terrified manner of the witnesses."



# MARINE REVIEW.

DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

Published every Thursday at No. 516 Perry-Payne building, Cleveland, O.  
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The books of the United States treasury department contain the names of 3,657 vessels, of 1,183,582.55 gross tons register in the lake trade. The lakes have more steam vessels of 1,000 to 2,500 tons than the combined ownership of this class of vessels in all other sections of the country. The number of steam vessels of 1,000 to 2,500 tons on the lakes on June 30, 1892, was 321 and their aggregate gross tonnage 534,490.27; in all other parts of the country the number of this class of vessels was, on the same date, 217 and their gross tonnage 321,784.6. The classification of the entire lake fleet is as follows:

Class.	Number.	Gross Tonnage.
Steam vessels .....	1,631	763,063.32
Sailing vessels.....	1,226	319,617.61
Canal boats.....	731	75,580.50
Barges.....	69	25,321.12
Total.....	3,657	1,183,582.55

Tonnage built on the lakes during the past five years, according to the reports of the United States commissioner of navigation, is as follows:

	Number.	Net Tonnage.
1888.....	222	101,102.87
1889.....	225	107,080.30
1890.....	218	108,515.00
1891.....	204	111,856.45
1892.....	169	45,168.98
Total.....	1,038	473,723.60

ST. MARY'S FALLS AND SUEZ CANAL TRAFFIC.

	St. Mary's Falls Canal.			Suez Canal.		
	1892.	1891.	1890.	1892.	1891.	1890.
No. vessel passages	12,580	10,191	10,557	3,559	4,207	3,389
Ton'ge, net regist'd	10,647,203	8,400,685	8,454,435	7,712,028	8,698,777	6,890,014
Days of navigation..	223	225	228	365	365	365

Entered at Cleveland Post Office as Second-class Mail Matter.

AS NOTED in these columns on several occasions, the question of joint international control of the Canadian canals from Lake Erie to Montreal is fast gaining ground in the dominion, while in this country hardly a month passes of late without a convention of some kind being held to discuss the subject of a deep water outlet from the lakes to the seaboard. The leading commercial bodies of New York city will meet shortly to consider and recommend measures for the improvement of the canals of New York state, and it is expected they will recommend the construction of a 20-foot channel on American soil from Lake Erie to the Hudson. The farmers of Manitoba who are getting next to nothing for their wheat, as well as many vessel owners of Canada who favor joint control, do not relish the idea of progress on this side towards an enlarged canal through New York state. Knowing that the St. Lawrence canal system, upon which Canada has already spent about \$50,000,000, can not be enlarged so as to provide a 20-foot navigation without an expenditure of about \$200,000,000 additional, these interests in the dominion will, it is said, raise the question of joint control at the next session of parliament, but there are objections on both sides of the line that will work to the disadvantage of even serious consideration of the subject under present relations between the two countries. The question of joint control is not new. It was opposed by the late Sir John Macdonald as a step in the direction of political union, and the opposition which it would meet in this country from New York and other states having important ports of export on the Atlantic seaboard would be very great. Evidently then, this canal question bears an important relation to that of Canadian annexation, if the dominion is to be considered in it at all.

CAPT. ALEX. Mc. Dougall is undoubtedly entirely honest in his opposition to the construction of any kind of bridge between Connor's and Rice's points at the head of Lake Superior, except-

ing a structure that will permit of steam railway, street railway, pedestrian and all other forms of traffic, and offer the least possible resistance to navigation. He is fully supported in the stand he has taken by the Lake Carriers' Association, of which he is a director, and even the form of bridge he refers to is accepted only in view of the fact that some day a bridge of some kind will be erected at the point named. As Capt. McDougall says, the association which he represents at the head of the lakes now controls more than \$50,000,000 worth of tonnage, that will continue to grow to the advantage of the harbors of Duluth and Superior as long as the general government protects it against obstructions in navigable waters, while the bridge franchise grabbers have little more at stake than immediate benefits to be derived from a valuable charter.

WITHOUT improvement early in the iron market very little in the way of paying lake freights can be expected this fall or even during the winter months when season contracts are made. The only encouraging feature in the iron market lately is the resumption of work in some of the mills under a great decrease in pig iron production. Statements of production on Aug. 1 showed a decline of about 28 per cent. in the weekly output, while the report for Sept. 1, just issued, shows an additional decline of 29 per cent. On Sept. 1 the number of anthracite and coke furnaces in blast was only forty-three, against sixty-eight on the same date in 1892, eighty-four in 1891 and 103 in 1890. With such a decline in the output, it would seem that stocks will be very low when the general market for iron becomes active.

"SHIP BUILDING in America" is the title of a series of articles begun in the Sept. 1 issue of the Engineer of London, one of the best technical journals of Great Britain. The subject is carefully and fairly treated in two articles that have appeared so far, the tenor of which indicates a fear on the part of Great Britain that with modern machinery and the aid of a large number of capable naval architects, who have come here during the past few years from the Clyde and other European shipbuilding centers, this country will soon build its own ships to engage more extensively in foreign as well as domestic trade.

THE price of Bessemer pig iron in England on Thursday of last week was \$11.62 free aboard vessel; in Pittsburg the price of the same quality of pig was \$11.50. Steel billets on the same date sold in England at \$20.62, while the price here for billets of the same size and quality was \$19.50. These figures can be verified by reference to any of the trade reports dealing with such matters. What is the inference? Among most iron men such prices are said to be below the cost of manufacture.

ANENT the recent talk of a great Rockefeller combination in the iron ore trade of the lakes, it may be said that cornering the iron ore business of Lake Superior would prove too big a job for any trust or syndicate. Big corporations already in the Lake Superior field would exert a counter influence that was never met with in the oil business, as a control of the oil product followed close upon its inception as an industry. There is too much hurrah in this latest Missabe boom.

NOW that the American sloop Navahoe has defeated the Britannia, owned by the Prince of Wales, in the great race on the English channel for the Brenton's reef cup, it can be no longer claimed that the American champions are not good sea-going boats. It has long been the excuse of English yachtsmen that our boats were only racing machines, unfit for the kind of sailing to which they claim the deep cutters are subjected.

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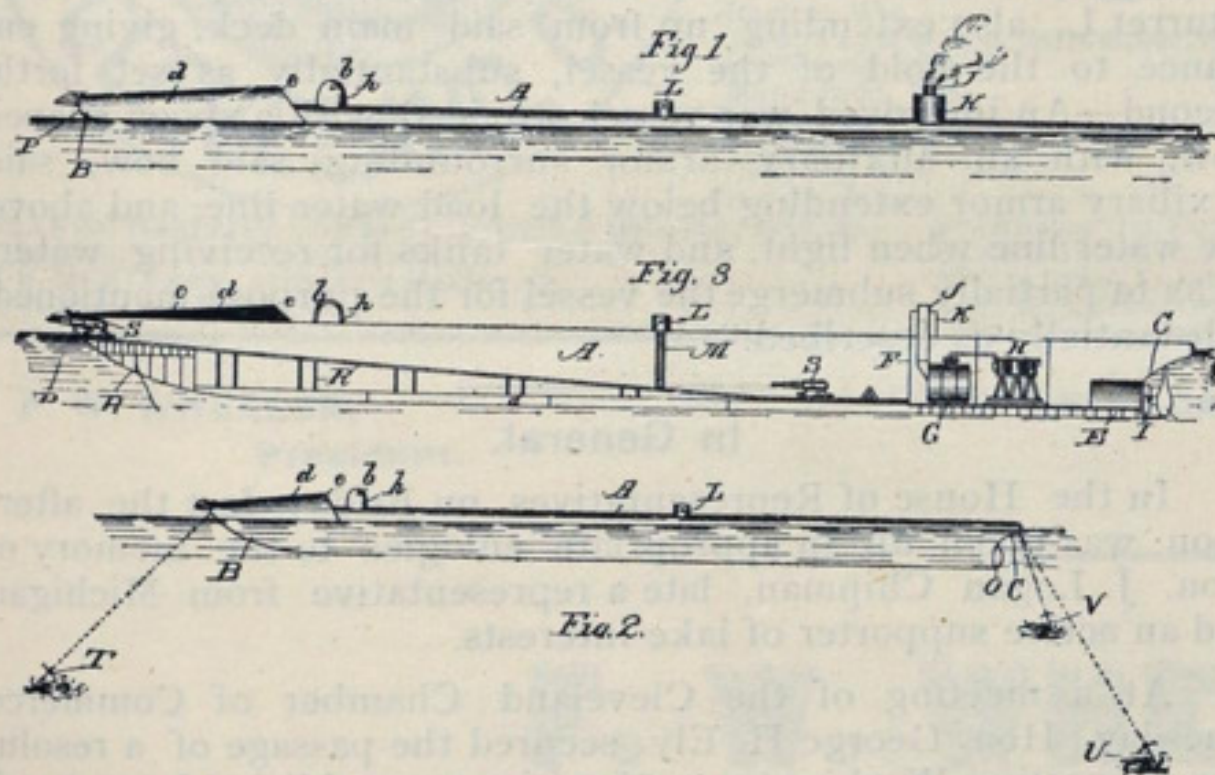


## Capt. Alex. McDougall's Patents.\*

WAR VESSEL—SPECIFICATION FORMING PART OF LETTERS PATENT  
NO. 498,682—DATED MAY 30, 1893—APPLICATION FILED  
AUGUST 20, 1891—RENEWED MAY 3, 1893—  
SERIAL NO. 472,910—NO MODEL.

In this specification Capt. McDougall describes his coast defense vessel. He says:

"My present invention relates to an improved type of vessels which are particularly adapted for use in times of war for coast and harbor defense. These vessels are adapted either to be propelled by steam or other power, or to be towed from place to place by suitable towing steamers. The hulls of these vessels are of the same general shape and construction invented by me, and embodied in various letters patent of the United States, which have been granted to me or to my assigns, and which have heretofore been used for carrying freight and passengers. In those vessels there have been turrets both near the bow and stern, for supporting working decks, and in case the vessel is provided with propelling mechanism, the turrets at the stern carry a suitable cabin, which offers accommodations to the officers and passengers. In the present vessel those turrets, working decks and cabins are dispensed with. The bow portion of the present vessels is covered above the water line with an auxiliary armor, which consists of wood or other suitable backing, fastened to the outside of the vessel, and covered by a plating of iron, steel or other metal. Directly back of this auxiliary armor and extending a short distance above the same is a conning tower, in which is placed a steering apparatus and which is provided with the usual slots or holes to enable the steersman to see ahead. Some distance in the rear of the conning tower,



and at about the central part of the boat, is a heavy metal turret, which is used to enter the hull and for ventilating the same. Upon this central turret are to be carried machine guns, to prevent boarding and to keep off attacks from torpedo boats and small craft. If the vessel is provided with propelling mechanism then the smoke stack is placed behind this central turret near the stern.

"The matter which has just been outlined is that which is intended to be covered and claimed herein. So far as the mounting of the guns is concerned, it is extraneous to the invention as embodied in this patent. One or more guns may be used, mounted within the vessel, or on top of the same, but preferably so as to point out through the extreme nose. I have devised an improved means of mounting the guns within the vessel, which I will now describe, but it should be understood that I make no claim to the same herein, since it forms the subject matter of a separate application for letters patent, filed by me on the 23d day of March, 1892, and numbered serially 426,123. The extreme bow or nose of the vessel consists of a heavy circular metal plate *e*, made hemispherical in cross-section and which is hinged at the top so as to swing outwardly. Extending down from the nose of the boat in the interior thereof are two or more inclined tracks which converge into a single track at the forward end. These tracks extend back to the engine and boiler rooms and at the lower portion are horizontal. Mounted upon each of said tracks is a gun of any suitable construction which is adapted to be loaded at the lower part of the track, then to be moved up the incline so as to swing open the said hinged plate or nose, then to be fired and finally to be returned to the bottom of the

track and reloaded. The manner of mounting and handling the guns, which I have just described, I consider to be the most desirable arrangement which can be adapted, but it is to be remembered that, so far as the present invention is concerned, any desirable and convenient method of arranging and operating the same may be resorted to.

"If the vessel is to enter an actual engagement the water tanks at the bow and stern and also the water bottom are filled with water so as to partially submerge the boat and leave only the curved upper deck exposed. When out of an engagement the vessel is ballasted with sand or gravel so as to give her the requisite stability, or if desired, coal or other fuel can be used for this purpose, so that the vessel will be enabled to take long voyages. When the vessel is provided with propelling mechanism it is to be kept head on to the approaching man-of-war, so as to present only the bow portion to the same, which will be but a very small surface, owing to the high water line of the boat. The gun or guns within the improved vessel are now fired at the approaching man-of-war preferably from the nose of the vessel, and a heavy and rapid fire can be kept up, so as to greatly damage the upper works of the man-of-war, if not to actually penetrate the hull of the same. The improved vessel would have no difficulty in keeping head on as described, since it has been found that vessels of my improved type can be steered with greater effectiveness than ordinary boats. Little or no damage would be received from shells or shots, for the reason that the only portion which is exposed is of such character that the shot or shell will strike a glancing blow, and for the additional reason that the exposed surface is protected by the auxiliary armor before referred to.

"In case the vessel is not provided with its own propelling mechanism, then it is towed by a tug or other propelling steamer to the harbor or entrance which is to be defended. An anchor is now passed out through the bow so as to head the vessels in the direction in which the approaching man-of-war is supposed to be coming. Another anchor is now passed out through the stern and is dropped some distance to the starboard side and another anchor is dropped in the same way to the port side. By means of the two steering anchors the stern of the vessel may be swung around so as to point the bow in any position of a wide arc, and in this way the approaching man-of-war may be covered and shelled in precisely the same manner and with equal effectiveness as when the vessel is provided with its own propelling mechanism. The principal advantage of my present invention is that a vessel of this type can be built very cheaply. Another great advantage is that ordinary freight and passenger vessels of my improved design can be quickly and economically converted into vessels of war in a very short time by armoring the bow, removing the turrets and adding the conning tower, central turret and interior arrangements. Another very important advantage is that very large and powerful guns may be used. The mouth and the greater part of the gun are outside of the vessel so that the concussion caused by the firing of the gun can not affect the vessel or the crew in any way. Another reason why very large and heavy guns can be used is that they can be arranged so that they will be, for the most of the time, below the water line, and will tend to steady the boat instead of making her top heavy as is the case with many modern ships of war. When a wide harbor or entrance is to be protected it will be an advantageous arrangement to place a number of the vessels in a circular line converging away from the mouth of the harbor or entrance so as to offer practically an impregnable barrier to the approach of any men-of-war or other vessels. If the vessel is not in the engagement and more particularly in the case of a steam vessel, it may be put into very effective use in the transportation of troops or stores; and when necessary the vessel may be very quickly reconverted into a freight and passenger boat at but a slight expense.

"Fig. 1 is a side elevation of one of my improved war vessels showing the same as being provided with propelling mechanism. Fig. 2 is a similar view of one of my improved war vessels adapted to be towed, and Fig. 3, a cross-sectional view of Fig. 1. A is the hull, B the bow and C the stern. The framework of the hull consists of transverse frames extending entirely around the interior thereof. The transverse frames are strengthened longitudinally by means of suitable braces extending fore and aft; also by the usual keelson and further by means of the false bottom *a*, which forms the top of the water bottom. The transverse frames are further strengthened by means of cross stringers or rods, and by vertical braces. Such a framework is described in letters patent of the United States, granted

\*Under this heading we will publish specifications accompanying letters patent granted to Alexander McDougall, of West Superior, Wis., since his first application for a patent on the whaleback type of vessel, May 1, 1880.



fo me on July 28, 1891, and numbered 456,586, and therefore no claim to the same is made herein. To this frame work are secured the outer plates of the vessel, which are riveted to the transverse frames or ribs. D is a water tank which is placed within the bow of the vessel, and E is another water tank within the stern thereof. These two tanks connect with the water bottom, so that the water therefrom may flow into the water bottom, from which it may be pumped when it is desired to relieve the vessel of water ballast. F is a partition which divides the main portion of the hull from the boiler and engine rooms within the stern. G marks the boilers, and H is the engine, which is to be of any suitable construction. I is the propeller, which is connected with and operated by the engine H. Two or three propellers may be used if great speed is desired. J is the stack from the boilers, which passes up through the top of the vessel and which is protected by a heavy turret K. There is sufficient space between the turret K and the stack J to allow air to be drawn down into the after part of the vessel to ventilate the boiler and engine rooms. L is a heavy metallic turret mounted on the top of the hull, about midway between the bow and stern. Air is drawn down through this turret L for ventilating the main portion of the vessel. On top of this central turret L may be mounted one or more suitable machine guns for the purpose of keeping off torpedo boats and to prevent boarding. This central turret also serves as a means whereby the crew may enter the interior of the vessel. A ladder M is used for this purpose. It will be evident that two or more of these central turrets L may be used. The conning tower *n* is made of very heavy metal. This conning tower is provided with a door at its rear, through which it may be entered. It is desirable also to provide some means whereby the conning tower may be reached from the interior of the hull. A door can be used in the conning tower for the reason that the vessel will be kept always head on to any man-of-war, so that the conning tower will be kept always covered, and the officers will be allowed to quickly go on deck when necessary. The conning tower is provided with the usual slots or slits *b* to enable the steersman to see ahead. Within the conning tower is the steering apparatus which connects with and operates the rudder O. A heavy covering of wood or other packing *c* is secured to the bow portion of the boat and extends a short distance below the water line. This packing is covered by a heavy metal plating *d*, which is securely fastened thereto and which, together with the packing *c*, constitutes the auxiliary armor before referred to. The auxiliary armor is somewhat thicker at the after part than at the extreme bow part of the boat, so that the rear end will offer a convenient bulwark, behind which the officers may view any approaching vessel. This auxiliary armor is all that will be exposed to the fire of shells or shot, and by reason of its incline any shells or shot which may strike it will simply glance off. By making use of the packing &c., the cost of the auxiliary armor is lessened, and a certain elasticity is given thereto which will further increase its resisting qualities. The auxiliary armor serves to protect the main portion of the conning tower and the central turret, and also the stack when the vessel is provided with its propelling mechanism. It also offers a convenient cover to allow the officers and crew to walk about the deck, or to go from the conning tower to the central turret. It will also enable one vessel to signal another at its side or back of it without being seen by the enemy.

"The manner and means of mounting the guns within or upon the vessel, have no particular bearing on the present invention. I have invented such means however, which will be embodied in another application for a patent, and as I consider it to be the most advantageous arrangement which can be adopted, it will be briefly described. P is the extreme nose of the vessel. This consists of a heavy metal forging or casting which is hemispherical in shape, although it may have a conical or other shot resisting shape. The nose is hinged at its upper end by means of a heavy hinge, so as to be swung outwardly. Inclined tracks of ordinary construction Q are mounted upon a suitable superstructure R, and upon these are mounted the guns S. I prefer to use two or more tracks, which are to converge into a single track at the forward part of the boat, so that a number of guns may be used and each gun may point directly ahead. The tracks Q are preferably horizontal at the lower ends, so that the guns will remain stationary while being loaded. After each gun is loaded it is moved up the track Q by any suitable power and will open the nose P of the boat, which will be swung upwardly, although if need be, the nose P may be moved by any appropriate mechanism. The gun is then fired, after which it is allowed to move down the tracks where it is re-

loaded, so that the guns will be fired in alternation. In this way a very rapid and effective fire can be kept up. It is possible to arrange the gun so that when it is passed out through the nose of the vessel it will be fired automatically. It might also be possible to connect the two guns together so that one gun in moving down the inclined track will help to move the other gun up the same. The powder and shot magazines are to be placed near the bottom of the track, so that great facility is had in loading the guns. Owing to the fact that the vessel will always be kept head on to the approaching men-of-war, all that is necessary for the gunner to do is to get the proper elevation, which can be done by anyone experienced in the art of gunnery. When the vessel is provided with propelling mechanism it can be steered very easily by keeping a little headway. If the vessel is not provided with propelling mechanism then it is anchored in the harbor or entrance in the position illustrated in Fig. 3. T is an anchor which is passed out through the bow, and the chain of which passes through a hawse hole either below or to one side of the nose P. U is another anchor which is placed some distance to one side of the boat, at the stern thereof, and V is still another anchor which is similarly placed on the other side of the vessel. The chains of these anchors, U and V, pass in through the stern piece and pass around a suitable capstan or windlass. By hauling in on one or the other of these stern anchors, the stern of the boat may be swung around so as to point the bow in any desired direction to always cover the approaching man-of-war.

"What I claim as new is as follows: First—An improved war vessel, consisting of a hull, having a curved top, straight parallel sides, spoon-shaped bow and splayed stern; an auxiliary armor surrounding said bow, inclined and elevated above the deck at its rear, and above the water line; a conning tower extending up from the main deck behind said auxiliary armor, and a turret L, also extending up from said main deck, giving entrance to the hold of the vessel, substantially as set forth. Second—An improved war vessel provided with a spoon-shaped bow, with an auxiliary armor surrounding said bow, said auxiliary armor extending below the load water line, and above the water line when light, and water tanks for receiving water, so as to partially submerge the vessel for the purpose mentioned, substantially as described."

### In General.

In the House of Representatives on Friday last the afternoon was taken up in appropriate eulogies to the memory of Hon. J. Logan Chipman, late a representative from Michigan and an active supporter of lake interests.

At a meeting of the Cleveland Chamber of Commerce Tuesday, Hon. George H. Ely secured the passage of a resolution requesting Washington authorities to establish a branch office of the hydrographic service in Cleveland.

Charles E. Kremer, admiralty lawyer of Chicago, was in Duluth during the week, looking after testimony regarding the collision between the steamers Hadley and Codorus, as a result of which the Codorus sank in one of the slips of Duluth harbor.

### Bids on the Lock Gates.

Following is an abstract of bids for the gates for the 300-foot lock, St. Mary's Falls Canal, Mich., received and opened by Gen. O. M. Poe at Detroit on the 19th inst., in accordance with advertisement dated July 21:

Names of bidders.	Residence.	Soft steel, 2,404,657 pounds, per lb.	Forged and high steel, 119,168 lbs., per pound.	Cast steel, 36,167 pounds, per lb.	Cast iron, 3,665 lbs., per pound.	Phosphor or aluminum bronze, 5,822 pounds, per lb.	Oak planks and cushions, 7,215 ft. B. M., per M. ft.	Pumps, fittings, as specified, total.	Total.
Willard S. Pope.....	Detroit, Mich.	cts. 5 9-10	cts. 27 1-4	cts. 9 1-4	cts. 6	cts. 35	\$ 60 00	2,100 00	\$182,088
Chicago Ship Bldg. Co	Chicago, Ill.....	7 28-100	13	11	6 4-10	37 5-10	100 00	1,470 00	199,271
Riter & Conley.....	Pittsburg, Pa..	6 3-4	37	10 7-10	9 4-10	62 6-10	87 50	3,446 10	218,248
King Bridge Co.....	Cleveland, O...	7	42	8	4 1-2	30	50 00	1,000 00	224,637
Detroit Dry Dock Co..	Detroit, Mich.	9 3-10	48 1-2	13	9 3-10	51 3-4	75 00	1,500 00	291,732
John P. McGuire .....	Cleveland, O...	7 9-10	37 67-100	9 6-10	8	45	70 00	2,100 00	244,025

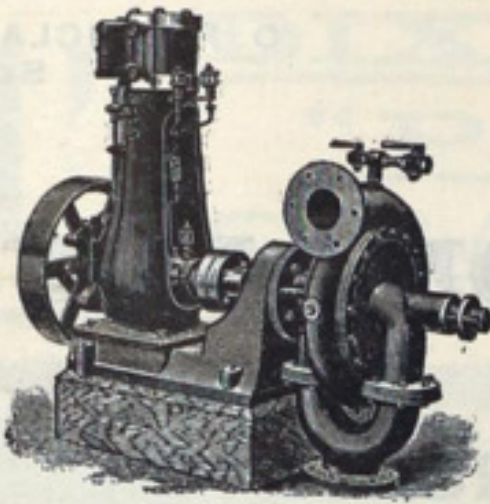
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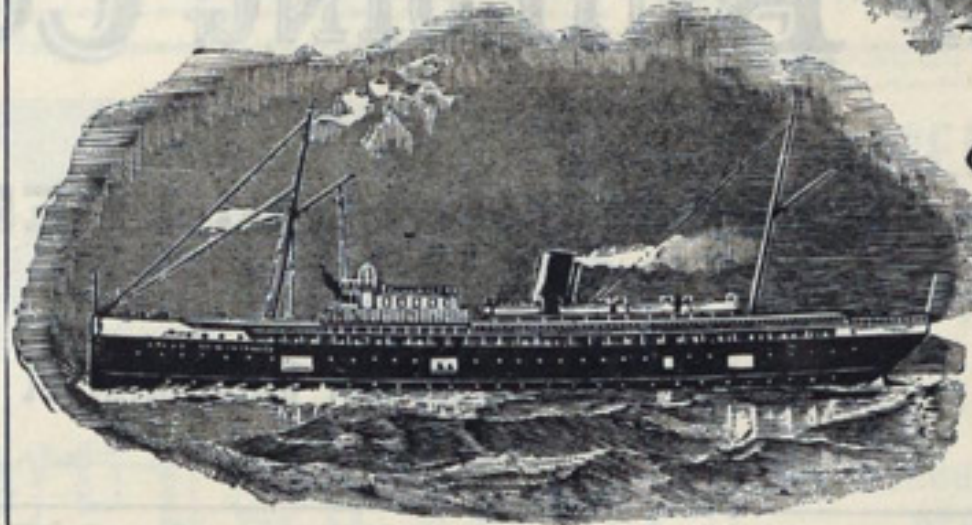


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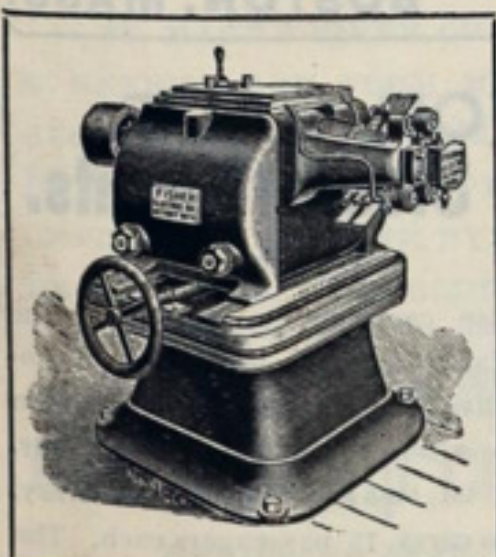
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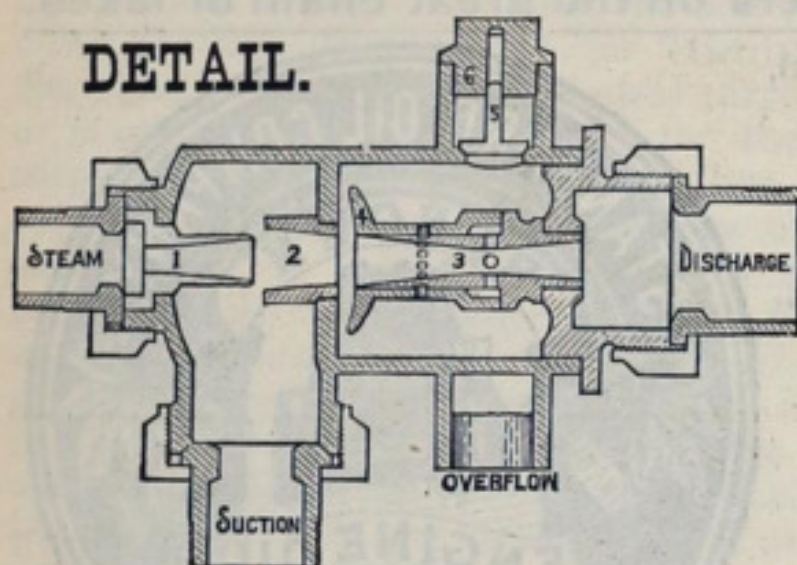
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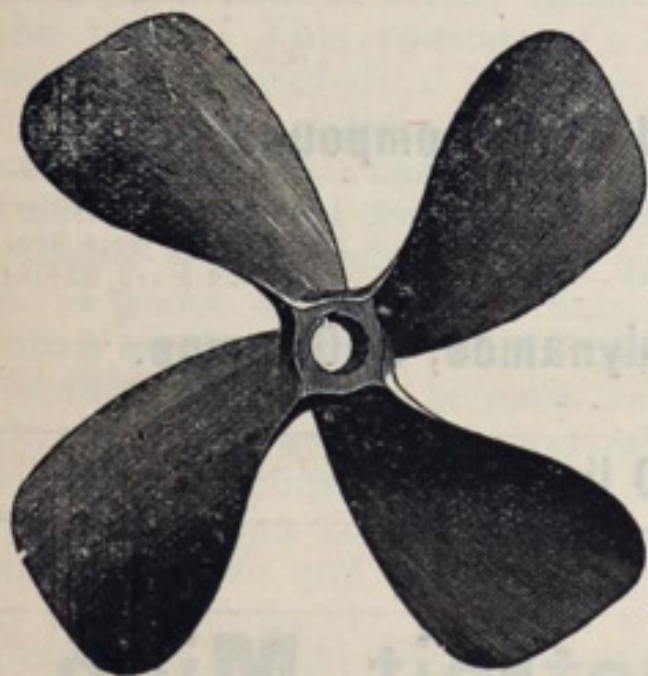
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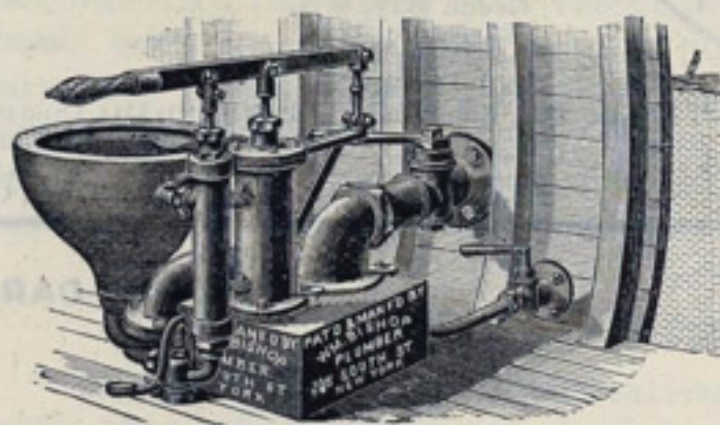
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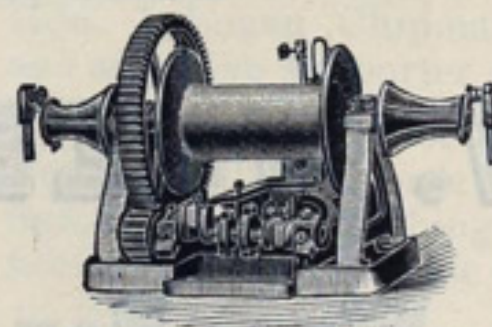
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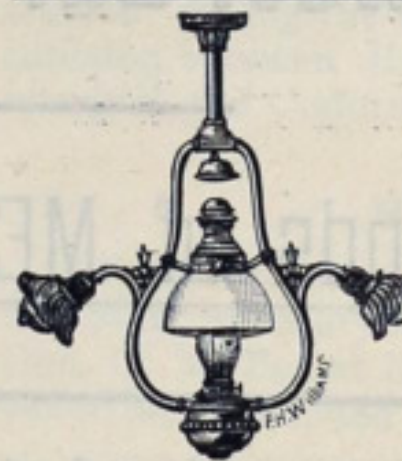
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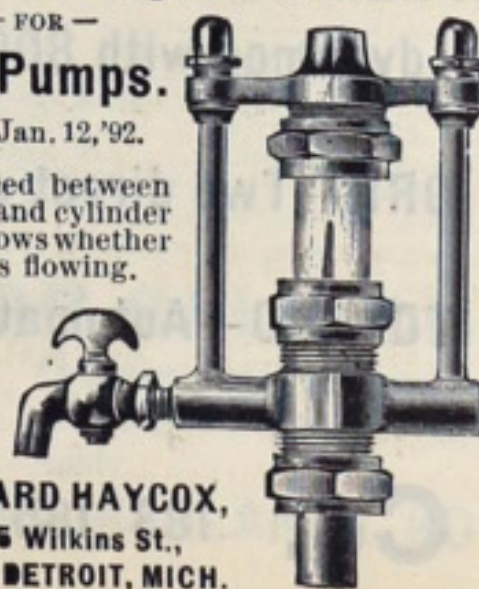
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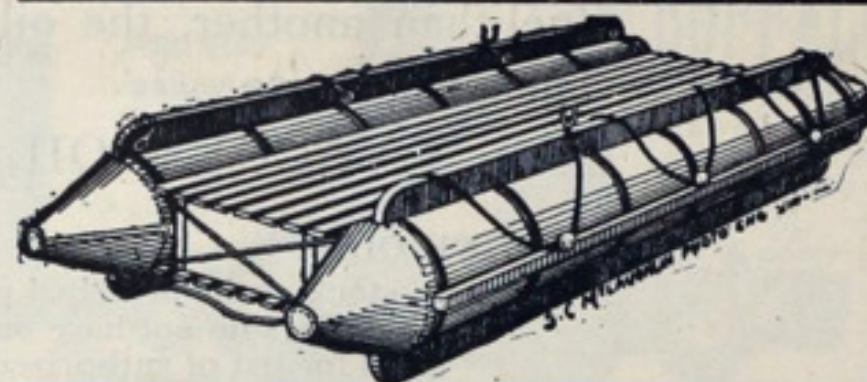
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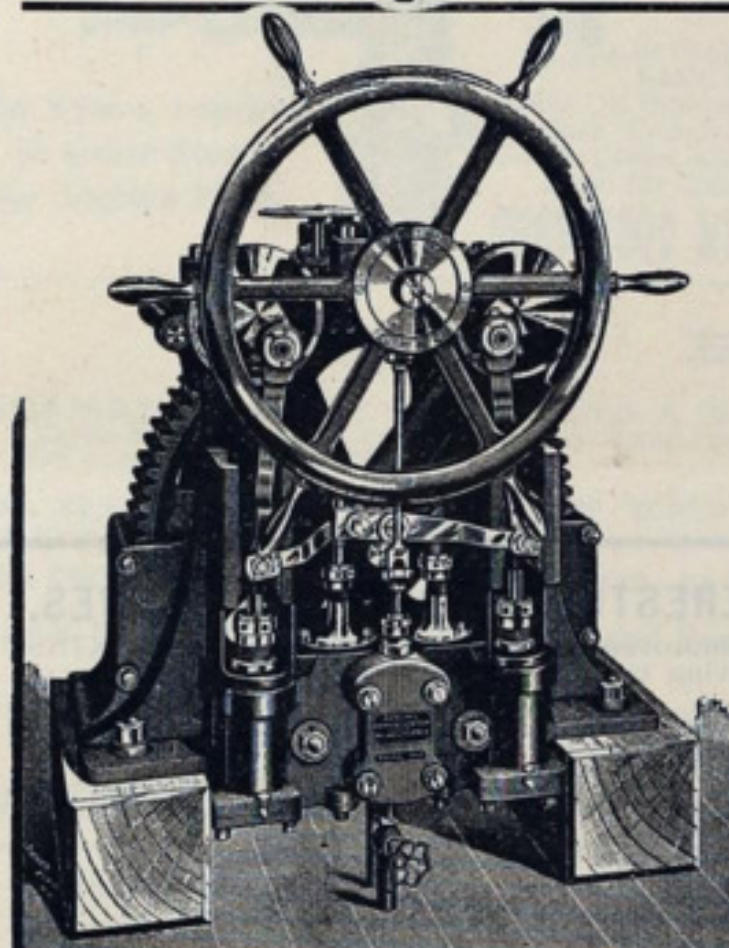
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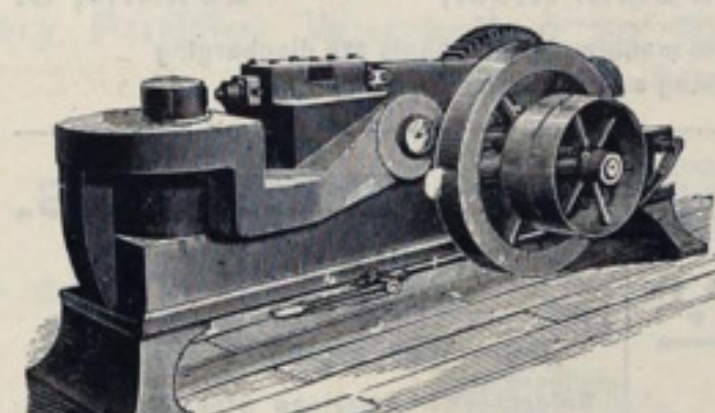
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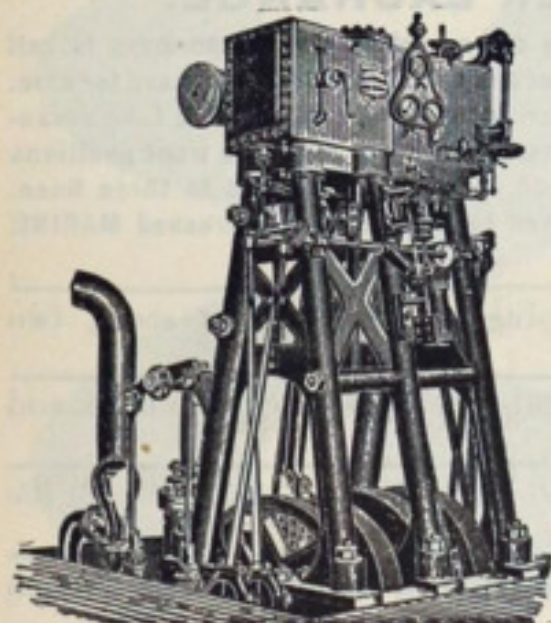
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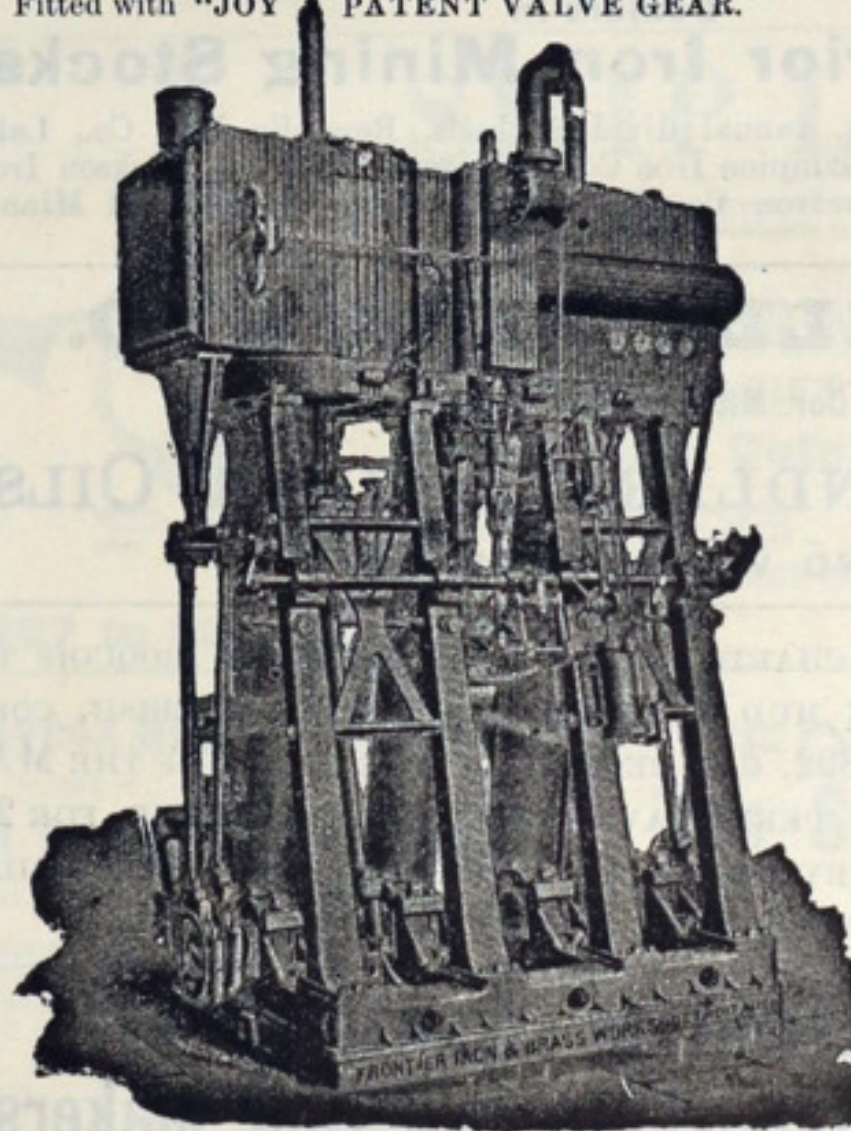
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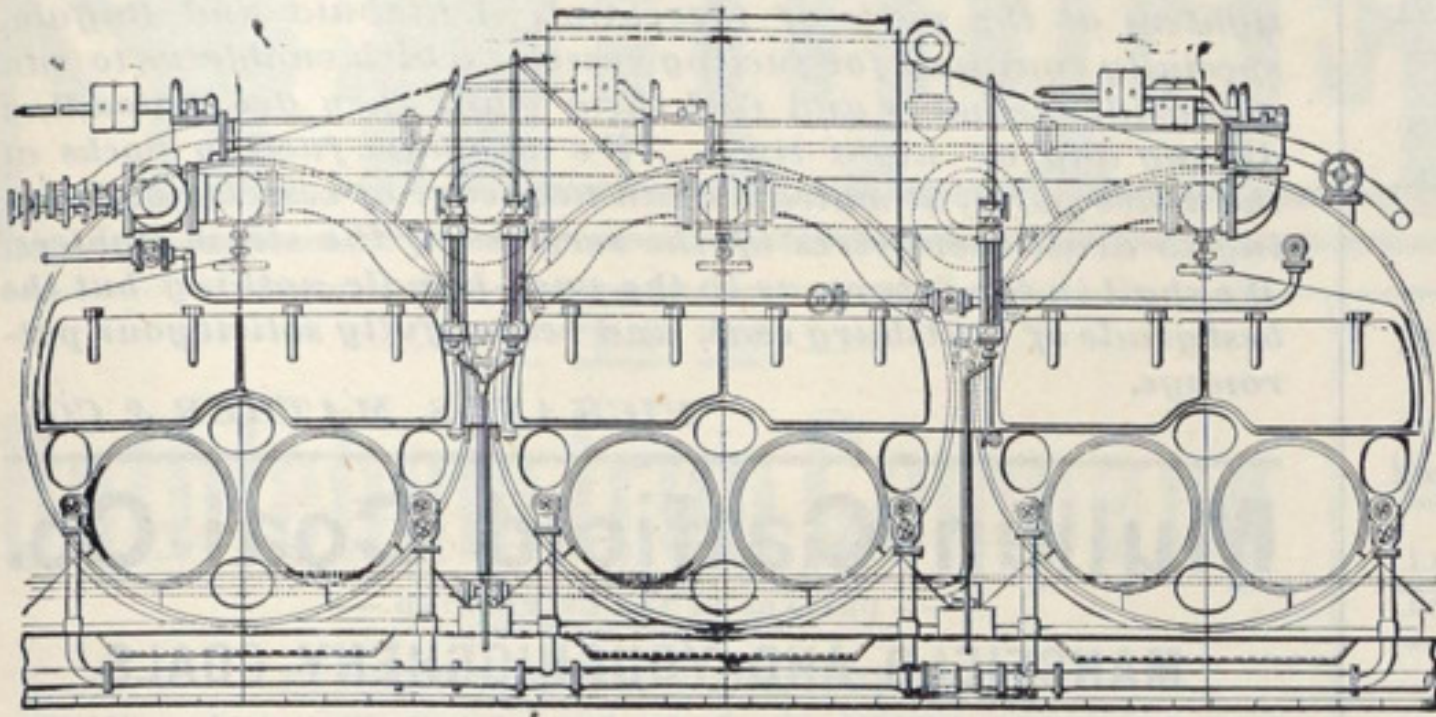
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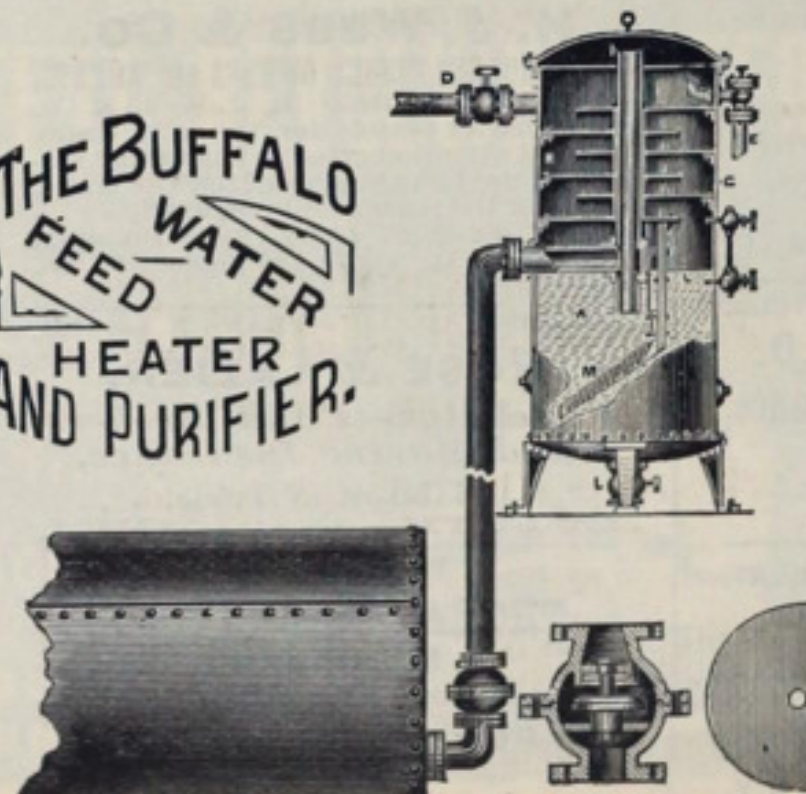
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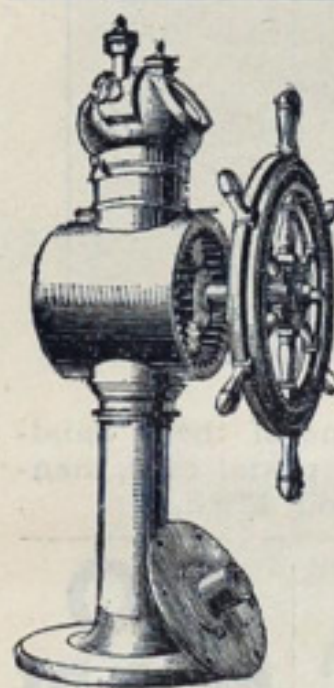
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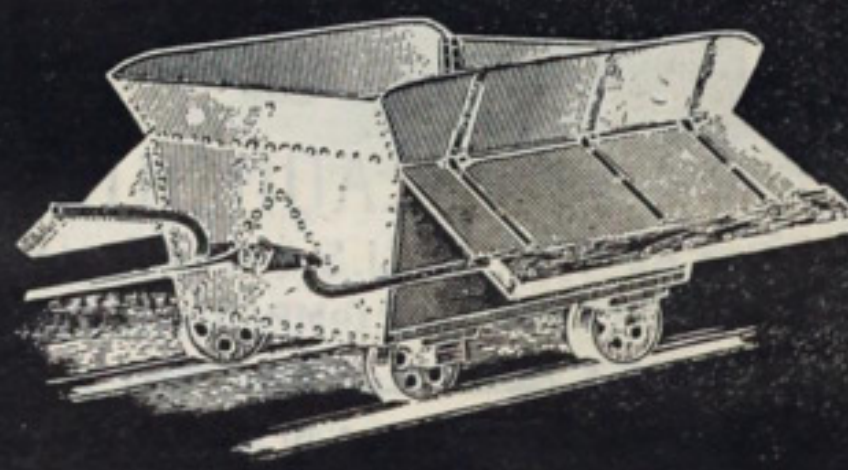
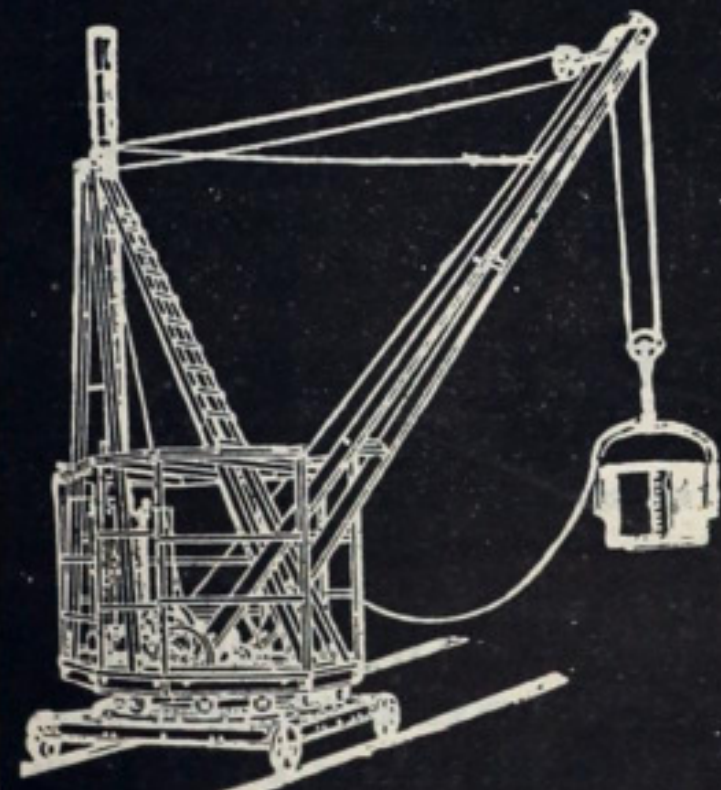
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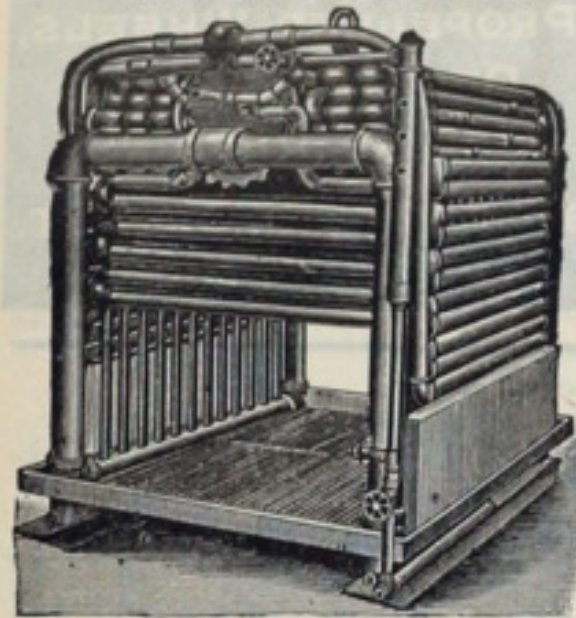
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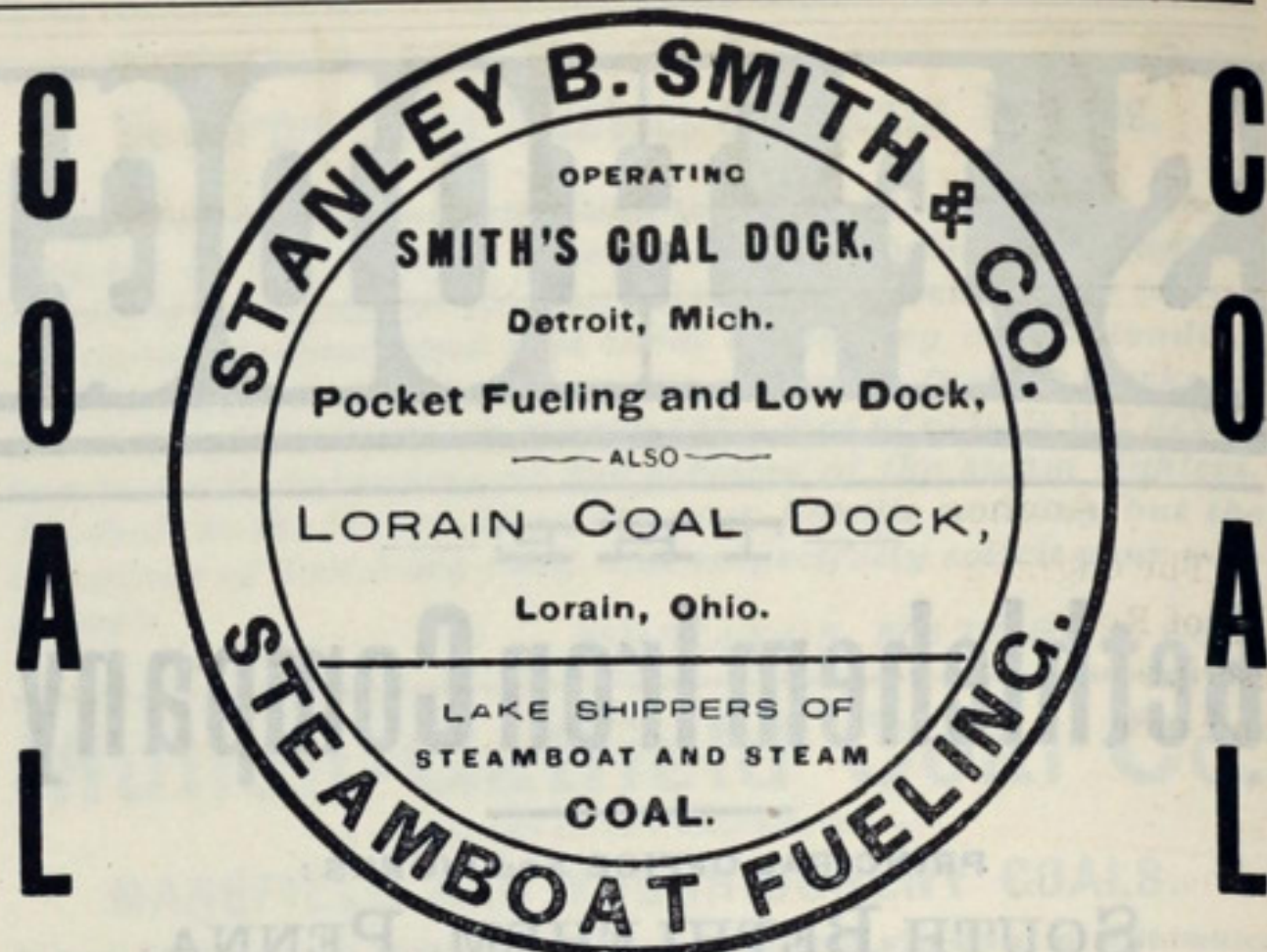
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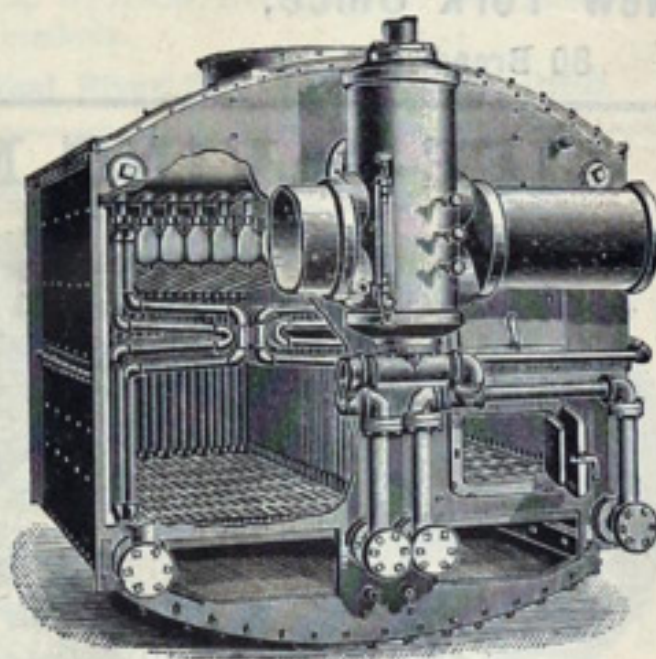
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